Refrigerator service manual

Single door serial

MODEL : RS-45DL（BC-345Y/HCE）

Content

1.Safety precautions …… 3~3

2.Specification…….....4~4

3.Parts identification……...…….……5~5

4.Refrigeration system diagram…….…….…….……6~6

5.Circuit diagram……6~6

6.Maintenance service and Troubleshooting ……..……. 7~10

7.Quality information report…….……...…11~11

8.Exploded view and part list…….…....…12~15

1.Safety precautions

Please read the following instructions before servicing your refrigerator.

1)Check the refrigerator for current leakage.

2)To prevent electronic shock, unplug before servicing.

3)Always check line voltage and amperage.

4)If you use any kind of appliance, check regular current. voltage and capacity.

5)Don't touch metal products in the freezer with wet hands, this may cause frostbite.

6)Prevent water from following onto electric elements in the mechanical parts.

7)When tilting the refrigerator, especially the thin plates(ex. Glass shelf or books).

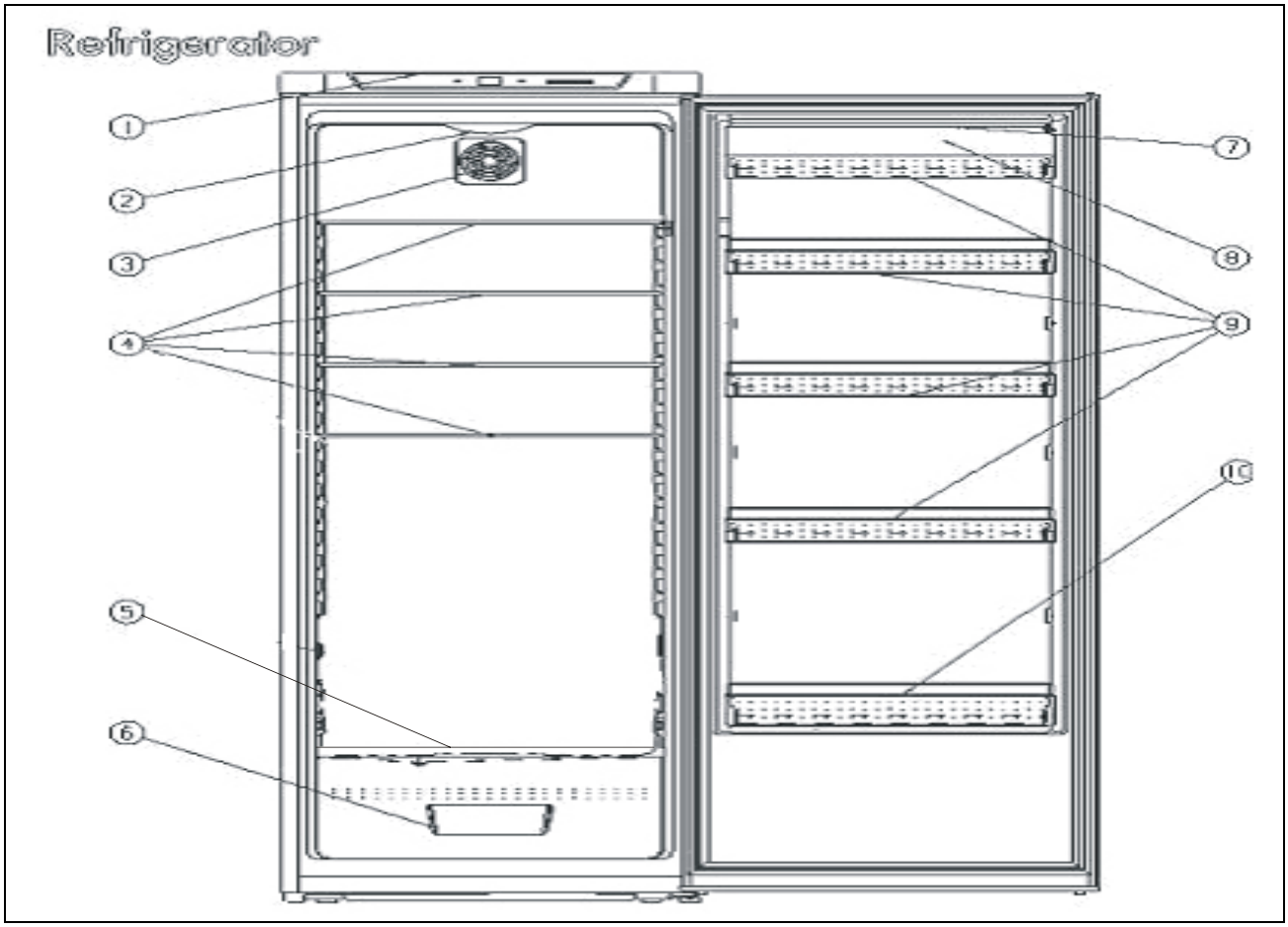
8)When servicing the evaporator, wear cotton gloves. This is to prevent injuries from the sharp evaporator fins.

9)Leave the disassembly of the refrigerating cycle to a specialized service center. The gas inside the circuit may pollute the environment.

2.Specification

Model No.		*RS-45DL （BC-345Y/HCE）*
Type		*Single door larder*
Capacity		
Net	*Total/ (L/Cu.Ft.)*	*350(12.4)*
	Freezer/ (L/Cu.Ft.)	*/*
	Refrigerator/ (L/Cu.Ft.)	*350(12.4)*
Performance		
Climatic type	*(SN、N、ST、T)*	*N、ST*
Power	*V/Hz*	*115V/60Hz；220-240V/50Hz；*
Features		
General Features	*Temp. Control(Electronic/Mechanical)*	Electronic
	Defrosting(Automatic/Manual)	*cycle automatic*
	Reversible Door	*Yes*
	Handle(Recessed/Grip)	*Grip*
	Lock	*No*
	Refrigerant	*R134a/R600a*
	Foam Blowing Agent	*Cyclopentane*
Refrigerator Compartment	*Shelf (Material/No.)*	*Glass/5*
	Door Basket	*PS/5*
	Interior Lamp	*Yes*
	Vegetable Crisper	*PS/1*
	Vegetable Crisper Cover	*Glass/1*
	Egg Tray	*Yes*
	Can storage Dispenser	*No*
	Deodorizer	*Optional*
Freezer Compartment	*Star Rating*	*N.A*
	Ice Maker (Automatic/Twist/Normal)	*N.A*
	Shelf (Material/No.)	*N.A*
	Drawer	*N.A*
	Door Basket	*N.A*
Dimensions		
Net	*Width/mm*	*594*
	Depth /mm	*634*
	Height/mm	*1752.5*
Packing	*Width/mm*	*648*
	Height/mm	*1831*
	Depth/mm	*713*
Weight	*Net/Packing/Kg*	*59/69*
Loading Capacity	*20Ft/40Ft/40H.C.*	*27/54/73*
End of Table.		

3.Parts identification

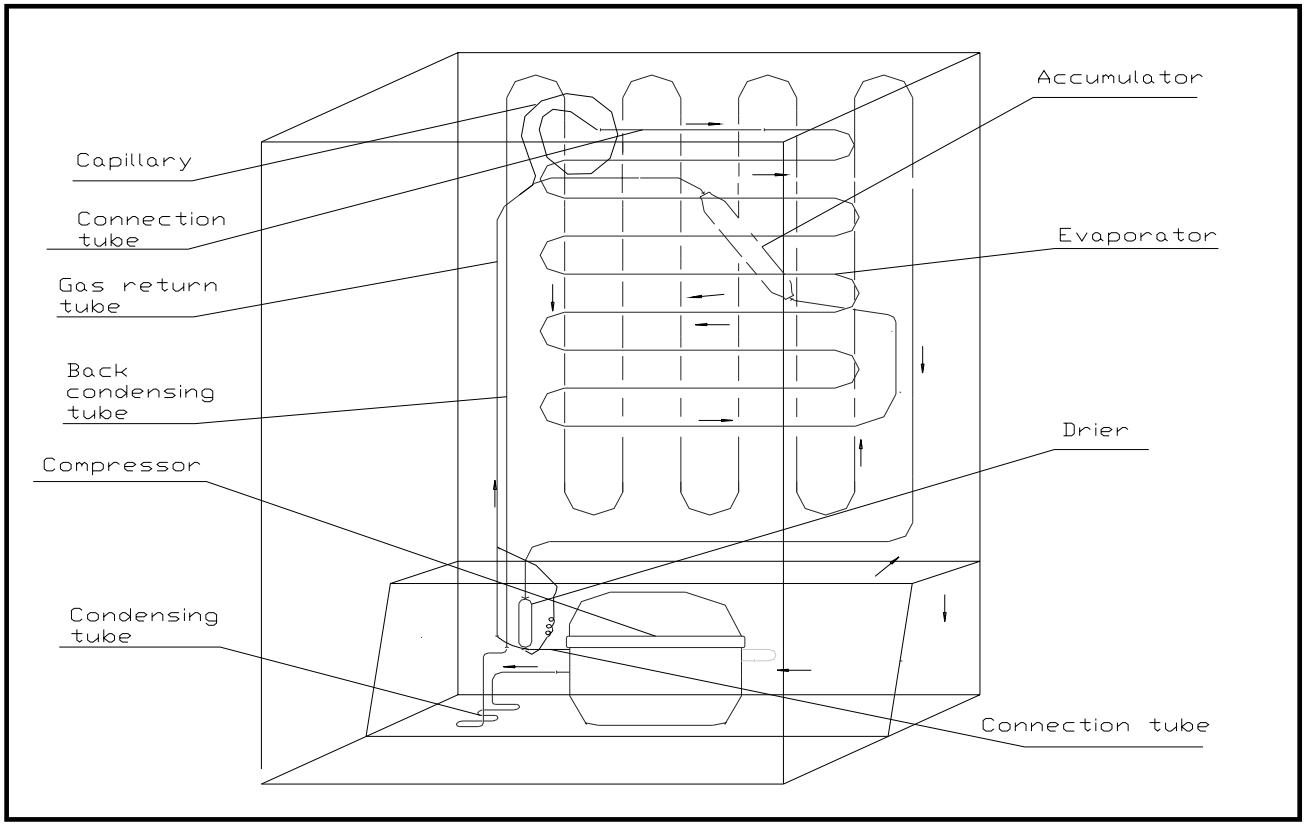


1. Control panel 2. Lamp (inside) 3. Air outlet 4. Glass shelf 5. Crisper cover 6. Crisper drawer 7. Door rack cover 8. Egg rack(inside) 9. Door rack 10. Door lower rack

Note:

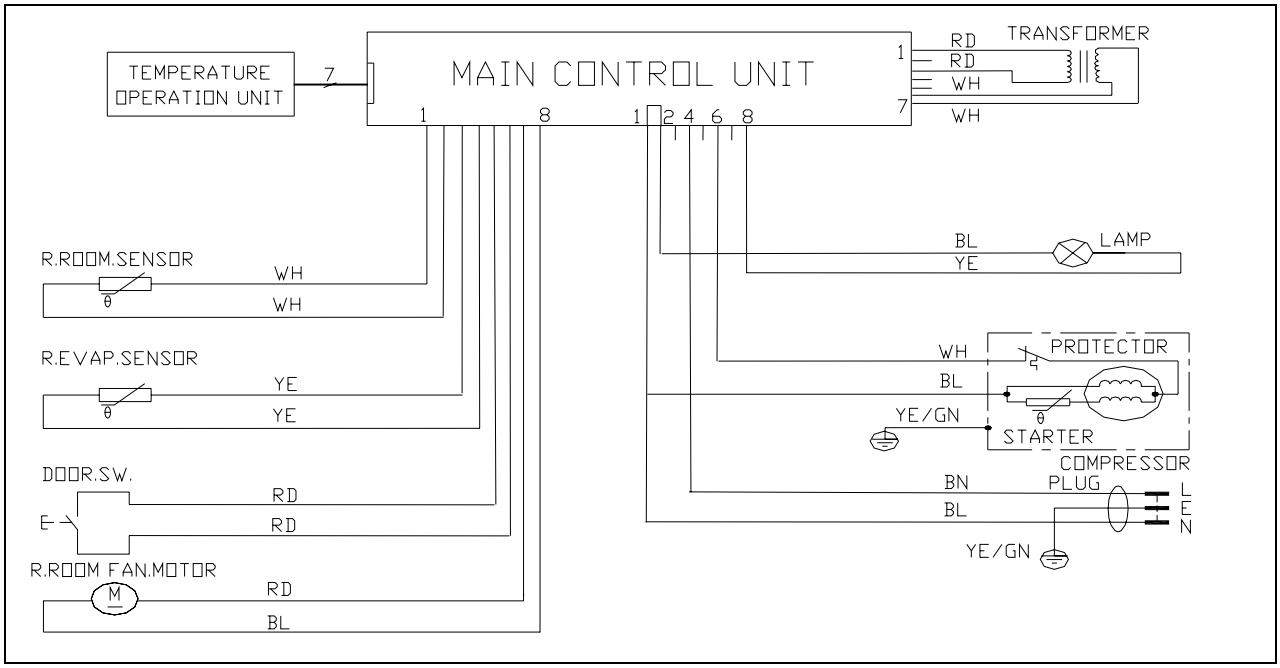
Due to the updated modifications of our products, your refrigerator may differ slightly from this Instruction Manual, but the functions and using methods remain the same.

4.Refrigeration system diagram



when the refrigerator is just powered on. The refrigerant flows in the sequence: Compressor →Condenser →Dry filter → Capillary tube→ Evaporator .

5.Circuit diagram



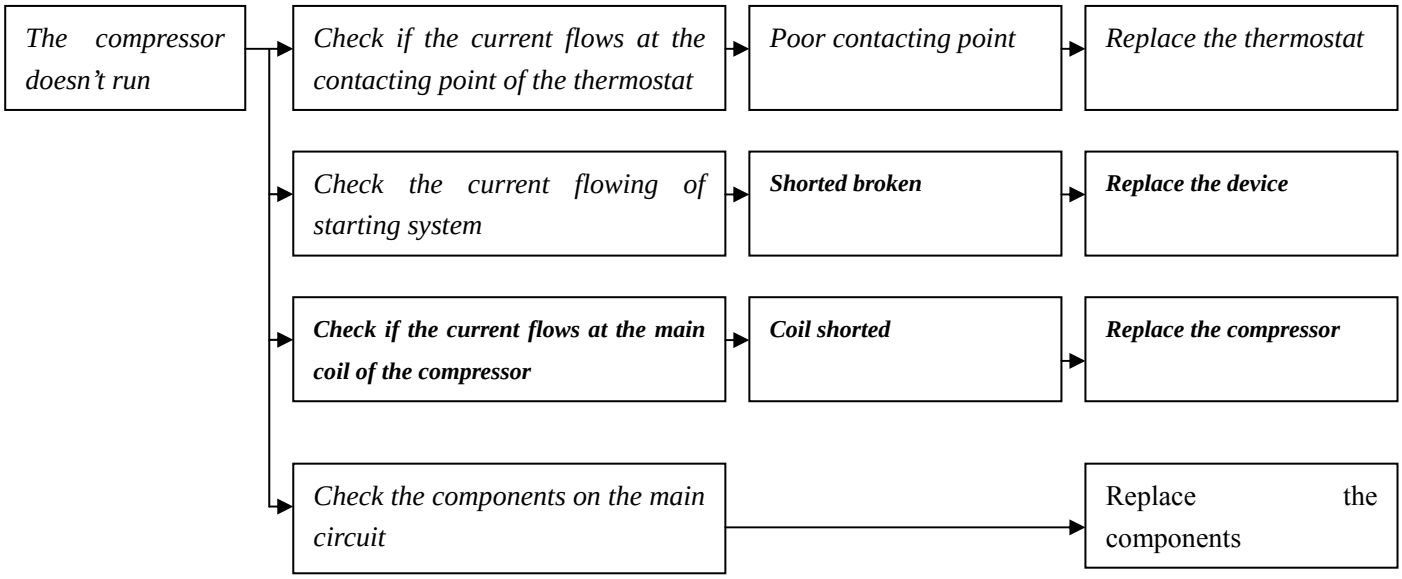
The electronic-controller directly controls the start and stop of compressor and hence the refrigerator temperature. The door switch directly controls the start and stop of the lamp.

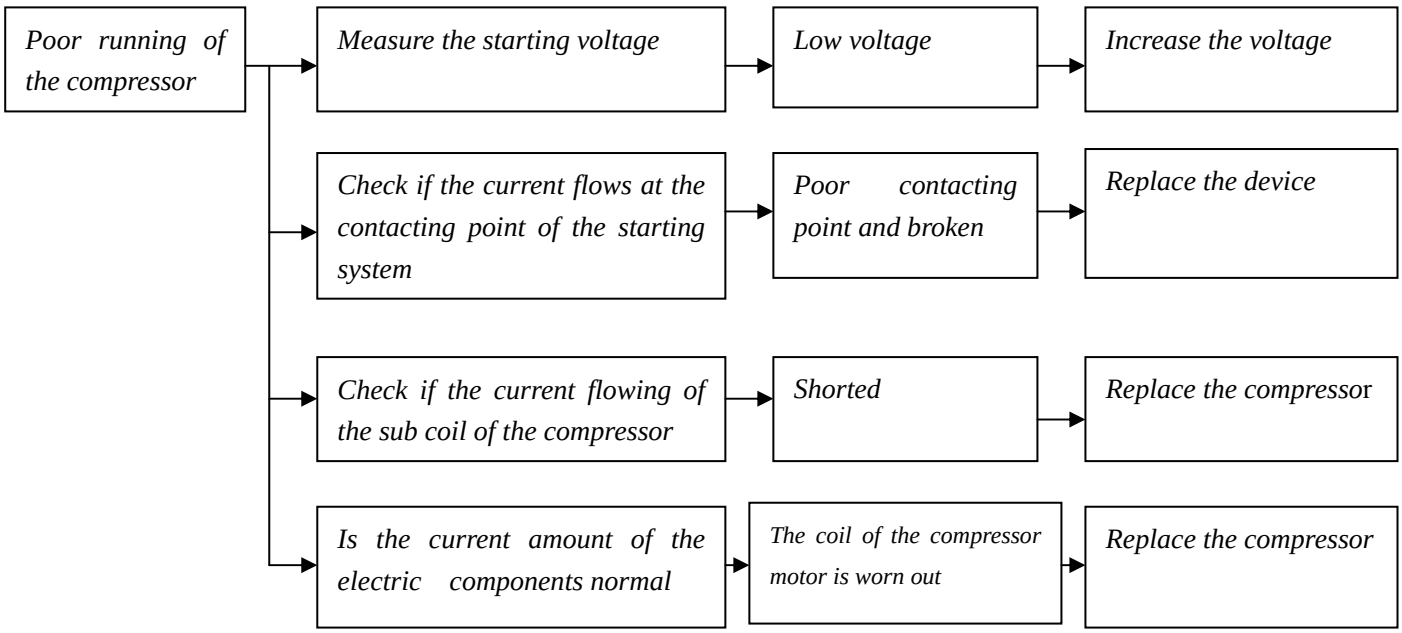
6.Maintenance service and Troubleshooting.

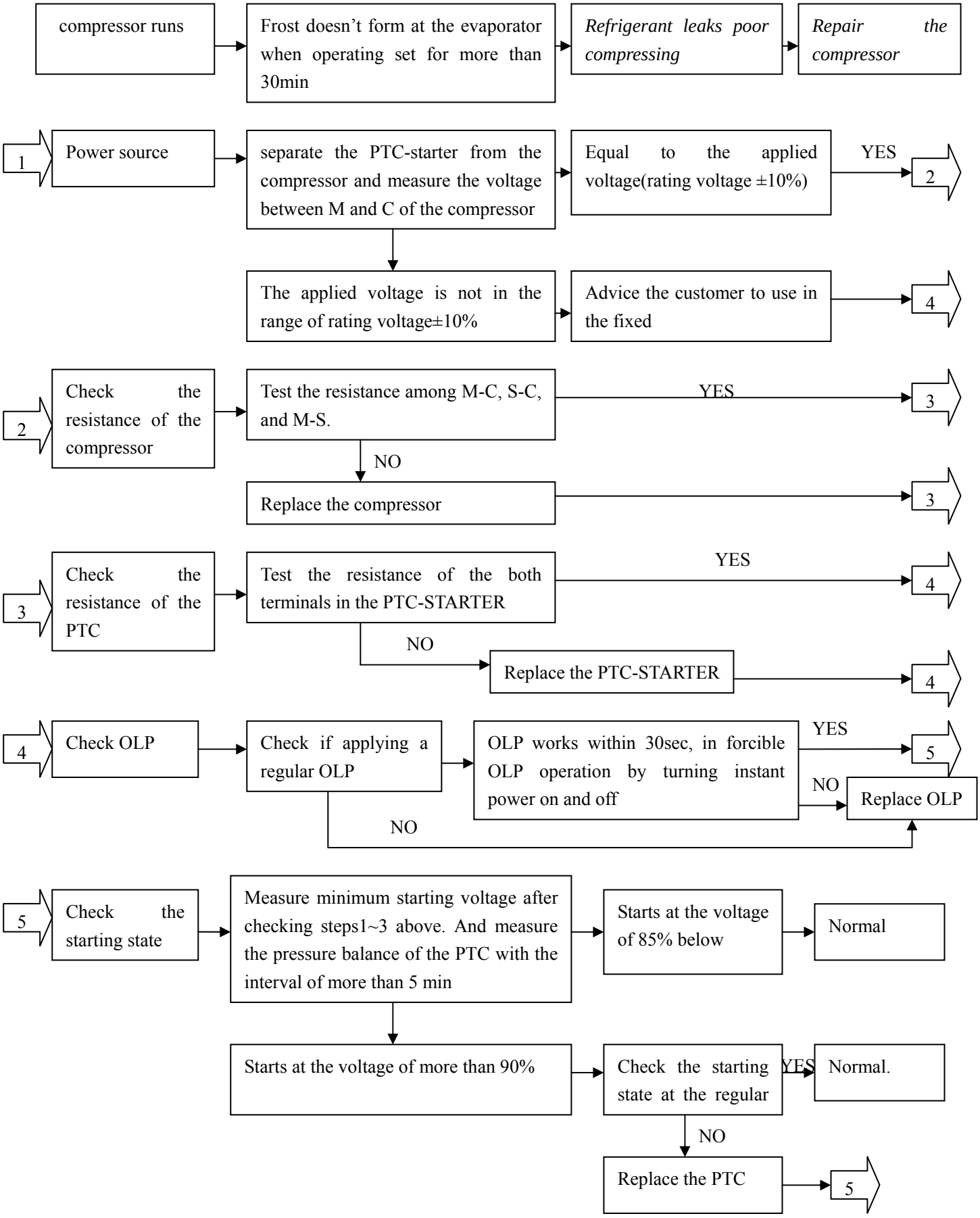
DEFECT	***EFFECT***	***CAUSE***	***REMEDY***
Group partially or completely out of refrigerant charge	*Evaporator dose not frost even though motor-compressor runs continually.*	*An empty refrigerant system indicates a leakage of R600a.this loss is generally to be looked for at the soldering points connecting the various components or in an eventual hole in the evaporator made by the user.*	*Leakage must be eliminated by re-soldering the defective point or substituting the damaged evaporator.*
Excessively full	*This defect is indicated by the presence of water outside refrigerator near the motor caused by formations of ice on the return tube.*	*If in the refrigerant system a quantity of R600a is introduced which is greater than that indicated, the excess gas dose not terminate its expansion in the evaporator but proceeds into the return tube.*	*The system must be emptied and subsequently refilled introducing the correct quantity of R-600a.*
Humidity in the system	*This defect is indicated by the partial frosting of the evaporator and by continual defrosting cycles determined by the interruption of the flow of gas on the evaporator. the motor compressor keeps running.*	*The refrigerant system is humid when there is a small percentage of water present which not completely retained by the dehydrator filter, enters into circulation with the Freon and freezes at the capillary exit in the evaporator.*	*The system must be emptied and then refilled after eliminating the humidity.*
Presence of air in the system	*Poor performance of the refrigerant system which is indicated: on the evaporator with a slight frost which dose not freeze and an excessive overheating of the condenser and motor-compressor.*	*There is air in a refrigerating system when during the filling phase vacuum is not effected or it is not adequately done.*	*Group must be drained and subsequently refilled after carefully creating vacuum.*
Blocked capillary	*Because of the lack of circulation Freon in the system, there is no frosting of the evaporator, while a slight overheating of the first spiral of the condenser is noted.*	*Eventual impurities contained in the Freon or in the components of the refrigeration system before assembly and not retained by the filter can obstruct the capillary.*	*To restore the system it must be emptied, substitute the capillary or the evaporator entirely in case the capillary is coaxial with respect to the return tube, then refill it.*
Motor compressor short-circuited or blocked	*The system dose not work and the "clixson" intervenes interrupting delivery to the motor- compressor.*	*In case of short circuit the breakdown is due to the electric winding if blocked, there is a mechanical failure in the motor-compressor.*	*The motor-compressor must be replaced and then proceed with refilling.*
Motor-compressor dose not	*No frost forms on the evaporator even if the motor-compressor is apparently running regulary*	*In this case there is a mechanical failure in the diaphram valves which remaining continually open, do not*	*The motor-compressor must be replaced*

compress		*permit the piston to suck and compressor the which consequentely dose not circulate in the system.*	*and then proceed with refilling.*
Noisy motor-compressor	*In case of mechanical failure in the motor-compressor there in an excessive noise when the system is functioning in case a suspension spring is unhooked banging will be heard and there will be especially strong vibrations when the system starts up and stops.*	*The cause of the excessive noise is normally to be sought for in a mechanical break down and only rarely in the unhooking of one of the suspension springs.*	*The motor-compressor must be substituted and then proceed。*

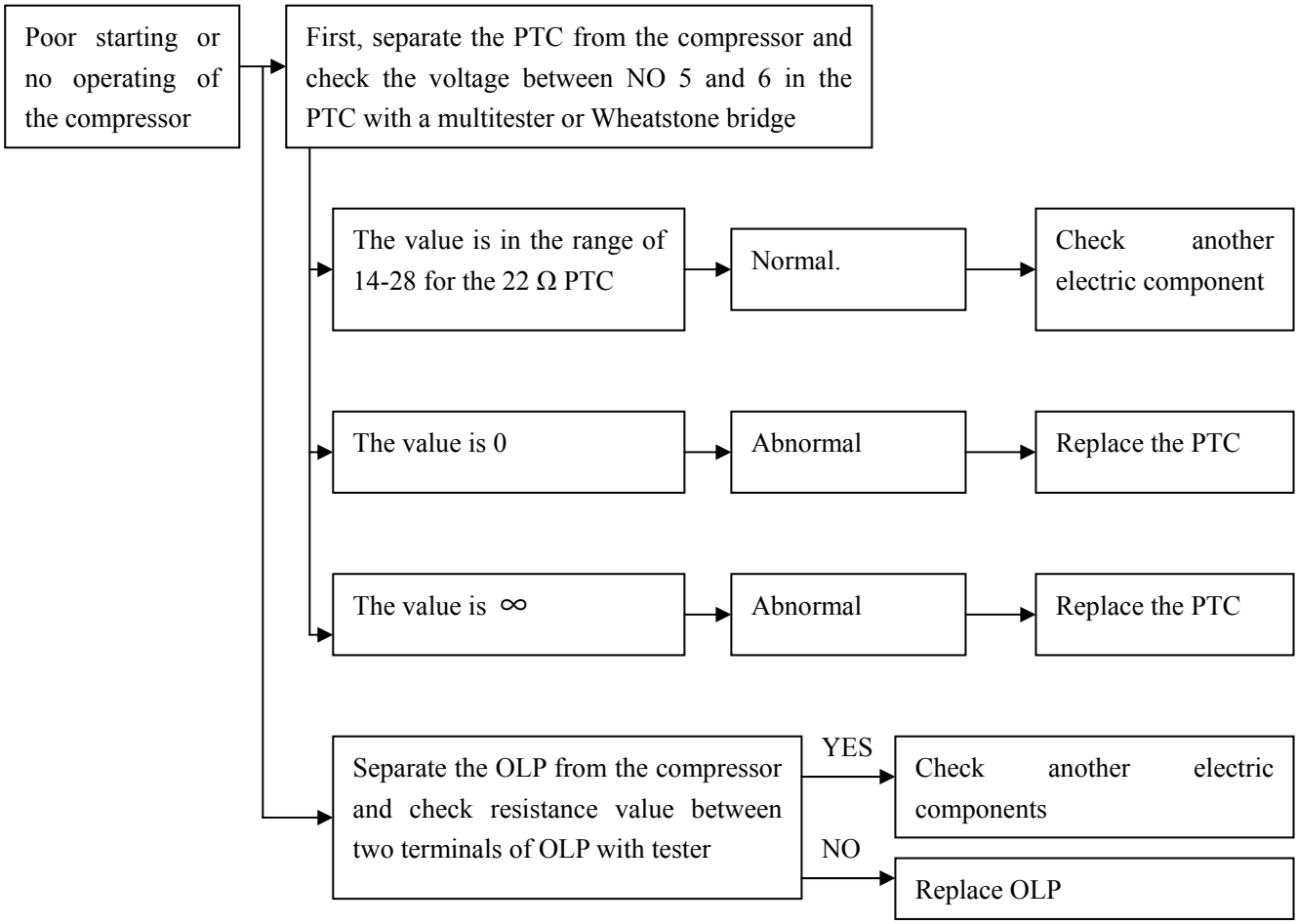
NO COOLING


The compressor doesn't run
Check if the current flows at the contacting point of the thermostat
Poor contacting point
Replace the thermostat
Check the current flowing of starting system
Shorted broken
Replace the device
Check if the current flows at the main coil of the compressor
Coil shorted
Replace the compressor
Check the components on the main circuit
Replace the components


Poor running of the compressor
Measure the starting voltage
Low voltage
Increase the voltage
Check if the current flows at the contacting point of the starting system
Poor contacting point and broken
Replace the device
Check if the current flowing of the sub coil of the compressor
Shorted
Replace the compressor
Is the current amount of the electric components normal
The coil of the compressor motor is worn out
Replace the compressor


compressor runs
Frost doesn't form at the evaporator when operating set for more than 30min
Refrigerant leaks poor compressing
Repair the compressor
1
Power source
separate the PTC-starter from the compressor and measure the voltage between M and C of the compressor
Equal to the applied voltage(rating voltage ±10%)
YES
2
The applied voltage is not in the range of rating voltage±10%
Advice the customer to use in the fixed
4
2
Check the resistance of the compressor
Test the resistance among M-C, S-C, and M-S.
YES
3
NO
Replace the compressor
3
3
Check the resistance of the PTC
Test the resistance of the both terminals in the PTC-STARTER
YES
4
NO
Replace the PTC-STARTER
4
4
Check OLP
Check if applying a regular OLP
OLP works within 30sec, in forcible OLP operation by turning instant power on and off
YES
5
NO
Replace OLP
NO
5
Check the starting state
Measure minimum starting voltage after checking steps1~3 above. And measure the pressure balance of the PTC with the interval of more than 5 min
Starts at the voltage of 85% below
Normal
Starts at the voltage of more than 90%
Check the starting state at the regular
YES
Normal.
NO
Replace the PTC
5

PTC


Poor starting or no operating of the compressor
First, separate the PTC from the compressor and check the voltage between NO 5 and 6 in the PTC with a multitester or Wheatstone bridge
The value is in the range of 14-28 for the 22 Ω PTC
Normal.
Check another electric component
The value is 0
Abnormal
Replace the PTC
The value is ∞
Abnormal
Replace the PTC
Separate the OLP from the compressor and check resistance value between two terminals of OLP with tester
YES
Check another electric components
NO
Replace OLP

7. Quality information report

Quality information

Thank you very much for purchasing Kelon products. In order to provide you with more satisfied products, please kindly fill in the questionnaire as the items indicated below. We shall strive for best to optimize our products based on your suggestion。

Client name					
Sale area					
Date					
No.	*Product model*	*Quality problem describe*	*Service result*	*Quantity /rate*	*Factory serial No.*
1					
2					
3					
4					
5					
6．Quality problem of whole sale product: detail descriptions					
client suggest：					
Factory activity：					